PSYCHOLOGICAL MEDICINE

Attendance at Counseling Sessions Predicts Good Treatment Response in Methadone Maintenance Therapy

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ABSTRACT

Objective: **This study aimed to identify the predictors of good response in Methadone Maintenance Therapy (MMT) defined as retention and negative urine for opiate for 6 month after the enrollment.**

Methods: **Across-sectional study from October 2007 to March 2008 was conducted on injecting drug users (IDUs) in the MMT programme at the Psychiatric Clinic, Hospital Raja Perempuan Zainab II (HRPZ II).**

Results: **A total of 150 patients were studied. Good treatment response in MMT was seen in 55% of these patients. The only predictor of good treatment response in multivariate analyses was number of counseling sessions. For every increase in counseling sessions, a person has 1.2 times the chance of having a good outcome (CI 1.049-1.349, *p*-value 0.007). Educational level, occupation, marital status, age and maintenance dose were not significantly associated with response in MMT**

Conclusion: **Frequent attendance at counseling sessions was found to have a positive influence in the good treatment response in methadone therapy. Hence, it is an important component in the treatment of patients in MMT programme.**

KEY WORDS

methadone maintenance therapy, counseling, injecting drug user

INTRODUCTION

In Malaysia the response to illicit drug use has been largely punitive. Nevertheless there has been a substantial rise in the number of drug users with over two-thirds of HIV/AIDS cases are among IDUs. High risk drug use practices are widespread and there has been an exponential rise in the number of cases reported. Harm reduction initiatives have only recently been introduced in Malaysia. In 2005 the government announced it will allow methadone maintenance programme to operate beyond the pilot phase to serve the needs of IDUs[1].

Previous studies have highlighted methadone maintenance doses[2-7] abstinence[6,8] and counseling attendance[8] as important predictors of good treatment outcome. Other predictor of better treatment response includes older age which has been hypothesized to result from increasing dissatisfaction with the addict life style with advancing age[5]. Married patients had a better outcome probably due to support obtained from spouse and their sense of responsibility towards their family[9]. Moreover, patients who were already a parent on enrolment had a significantly longer cumulative retention in treatment compared to those without children[6].

The effectiveness of methadone maintenance treatment in reducing opiate use, related crime and HIV risk behaviors is well documented[10,11]. Nonetheless, many patients drop out of treatment or continue using opiates and other illicit drugs. Significant treatment drop-outs typically occur in the first weeks or months of treatment[12]. Therefore, early identification of such patients could facilitate the development of treatment policy and guidelines targeted to their needs to prevent such incident. This study aimed to identify the predictors of good MMT treatment response defined as retention in the programme and no positive urinalysis result throughout the 6-month study duration.

METHODS

The MMT programme in HRPZ II started in November 2005 after screening of 164 candidates with the first session of direct observation intake involving 25 patients performed on 13th November 2005. Patients with known mental illness were excluded from the study as they have been found to have poor treatment response[13]. Those receiving anti-retroviral therapy were also excluded as anti-retroviral therapy was known to increase methadone metabolism thereby reducing its potency[14].

The study was approved by the Research and Ethics Committee, Universiti Sains Malaysia and Ministry of Health. All patients who were still in the MMT programme and had completed the 6-month duration from enrollment before or within the study duration were identified. Two patients who died due to HIV related illness and another who were transferred to other MMT centre were excluded. In total, 150 eligible MMT patients were studied during the study period.

Most of the socio-demographic and clinical data were collected from the clinical records. The Opiate Treatment Index[15] which consists of six independent outcome domains including drug use, HIV risk-taking behavior, social functioning, criminality, health status and psychological adjustment was routinely administered on enrollment into MMT programme. Additionally, a total of 7 urine samples were collected from

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Table 1. Characteristics of all patients and according to treatment response in MMT

	All subjects (n = 150) Frequency (%)	Good treatment response (n = 82) Frequency (%)	Poor treatment response (n = 68) Frequency (%)	p value
Sex				
Male	149 (99.3)	81 (98.8)	68 (100)	0.547*
Female	1 (0.7)	1 (1.2)	0 (0)	
Ethnicity				
Malay	148 (98.7)	82 (100)	66 (97.1)	0.204*
Non-Malay	2 (1.3)	0 (0)	2 (2.9)	
District				
Kota Bharu	128 (85.3)	71 (86.6)	57 (83.8)	0.634†
Others	22 (14.7)	11 (13.4)	11 (16.2)	
Educational level				
Primary school and below	6 (4.0)	2 (2.4)	4 (5.9)	0.257*
Secondary school and above	144 (96.0)	80 (97.6)	64 (94.1)	
Occupational status				
Unemployed	35 (23.3)	64 (78.0)	51 (75.0)	0.660†
Employed	115 (76.7)	18 (22.0)	17 (25.0)	
Marital status				
Single or divorce	119 (79.3)	65 (79.3)	54 (79.4)	0.983†
Married	18 (20.7)	17 (20.7)	14 (20.6)	
Family conflict				
No conflict	91 (60.7)	44 (53.7)	47 (69.1)	0.054†
Conflict present	59 (39.3)	38 (46.3)	21 (30.9)	
HIV status				
Non-reactive	49 (32.7)	27 (32.9)	22 (32.4)	0.941†
Reactive	101 (67.3)	55 (67.1)	46 (67.6)	
Legal issue				
No	24 (16.0)	11 (13.4)	13 (19.1)	0.343*
Yes	126 (84.0)	71 (86.6)	55 (80.9)	
	Mean (SD)	Mean	Mean	
Age	32.99 (5.51)	33.22	32.72	0.583‡
Induction dose	27.50 (6.78)	27.50	28.43	0.407‡
Maintenance dose	41.13 (10.53)	40.18	42.28	0.226‡
Number of counselling sessions	3.19 (3.24)	3.84	2.40	0.004‡

* Fisher's exact test, †Chi-square test, ‡Independent t-test

Table 2. Logistic Regression Analysis to Determine Factors Associated with good treatment response in MMT

	Simple Logistic Regression		Multiple Logistic Regression	
	Crude OR (95% CI)	P value	Crude OR (95% CI)	P value
Educational level	0.400 (0.071, 2.254)	0.299	3.755 (0.606, 23.250)	0.155
Occupation status	1.185 (0.555, 2.529)	0.660	1.250 (0.555, 2.816)	0.590
Marital status	0.991 (0.448, 2.193)	0.983	1.185 (0.506, 2.776)	0.696
Legal issue	1.526 (0.635, 3.666)	0.345	0.508 (0.198, 1.304)	0.159
Age	1.017 (0.959, 1.079)	0.580	1.013 (0.951, 1.079)	0.682
Maintenance dose	0.981 (0.950, 1.012)	0.226	0.980 (0.948, 1.012)	0.221
Counselling sessions	1.168 (1.040, 1.313)	0.009	1.190 (1.049, 1.349)	0.007

each patient and 12 counseling sessions was conducted per individual, group and family by the National Drug Agency staffs, counselors or medical officers within the 6-month period following the enrollment. Data that were not available or missing from the records were obtained by direct questioning by the first author who was involved in the MMT programme.

The data was analyzed using SPSS Version 17.0 for Windows. Descriptive analysis was used to describe the socio-demographic, methadone dosage and counseling session data. Univariate analysis was carried out to see the association between outcome (treatment response) and the independent variables. Chi-square test was used for categorical data and t-test was used for continuous data. Fischer's exact test was used if the assumption of chi-square test was not met. Significant level for all statistical analysis was set at 0.05. The relationship of significant and selected variables was later analyzed using the simple and multiple linear regression analysis.

RESULTS

The average age of the patients was 33 years old with maintenance dose for methadone 41 mg/day as shown in table 1. Almost all the patients were Malay male educated up to secondary school. More than three quarters were single or divorced, employed and having legal issue. About two thirds of them were HIV positive. Positive urine test for opiate was found in 52 (34.7%) patients and 23 (15.3%) patients discontinued the treatment within 6 months of enrollment into MMT. In total, 68 (45.3%) of patients were considered to have poor treatment response in MMT. None of the socio-demographic and clinical variables were significantly different between good and poor responder except for number of counseling sessions attended.

A logistic regression analysis was performed to measure the influence of treatment variable and outcome. Covariates included in the analysis were educational level, occupational and marital status, legal issue, age, methadone maintenance dose and number of counseling sessions attended. In preliminary final model, the only significant variable was counseling sessions. For every increase in counseling sessions, a person has 1.190 times the chance of having a good outcome (CI 1.049-1.349, p value 0.007)

DISCUSSION

Of the 150 patients, 127 remain in the programme after 6 month of

enrollment giving a retention rate of 84.7% which was quite good compared to a local study conducted in University Malaya Medical Centre[12] which found 75% retention rate after 18 weeks of treatment. The retention rates tend to become lower as the duration of treatment become longer. A study in Germany [16](Wittchen 2008) had a 12-month retention rate of 75%. Another local study conducted in Hospital Tengku Ampuan Afzan[7] calculated a retention rate of 59.9% over a period of 2 years. Nevertheless, most of the drop out occurred early in the treatment before stabilization consistent with the study by Gill[12], in which two-thirds of drop out occurred within the first month of treatment. Pertaining to the other part of treatment response, which is the urine test for opiate, 52 (34.7%) of patients were found to be positive mostly during the first few weeks of joining the therapy. It was rather not surprising as it is during this period that the methadone dosage was still being adjusted to achieve the optimum dose. Only 82 (54.7%) patients with both negative urine tests and retention in therapy for 6 months duration were considered to have a good treatment response in this study

Average methadone maintenance doses of 60 to 120 mg or higher have consistently better results than use of lower average doses, especially because heroin purity is now often greater than 40%[17]. However, the mean maintenance dose in this study was 41.1 mg which was comparable to 45 mg daily dose of methadone in another local study by Gill[12]. The authors argued that this was either because of the low quality of heroin, frequently containing less than 10% heroin or the different genetic make-up of our ethnic groups, as compared to the Caucasian population. Interesting a study conducted in Minneapolis[18] showed that ethnic Hmong from Laos required lower doses of methadone for stabilization ($M = 49.0$ vs. 77.1 mg; $p < .0001$) compared to heroin-addicted non-Hmong comprising mostly of Caucasian (50%) and African American (38%). This study did not find significant difference in methadone maintenance dose between the poor and good responders with the mean maintenance dose of 42.3 mg and 40.2 mg respectively. This indicates that there were other more important factors that contributed to poor response to treatment.

Counseling was the only variable found to have a significant association with treatment response in this study. A study by Morral[8] concluded that participants who attended 2 counseling sessions by the end of the second week of treatment were more than 12 times as likely to have superior 9 months outcome. It was suggested that counseling plays a synergistic role in treatment response in addition to the dosage of methadone. Methadone alone, even in substantial doses, may only be effective for a minority of patients. The addition of basic counseling was associated with major increase in efficacy and the addition of on-site professional services was even more effective[19]. Attendance to counseling served as an indicator of those patients with greater motivation or treatment compliance, each of which could contribute to superior treatment response.

CONCLUSION

In conclusion, counseling attendance is the only significant predictor for good treatment response defined as retention and negative urine test for opiate for 6 months after the enrollment in MMT. This study emphasizes the significance of provider related variables for enhancing treatment response rather than the patient's socio-demographic background.

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